



Ground Water Resources Commission Meeting

Wednesday, October 6, 2010



Mr. John Adams

DNR Office of Conservation

Adoption of Meeting Summary

August 18, 2010



Mr. Gary Snellgrove

DNR Office of Conservation

Statewide Water Management Plan Update



Statewide Water Management Plan

Months 1 & 2 (Mar & Apr)
RFP Advertisement, Receipt & Evaluation

Months 3-7 (May - Oct)
Award Contract
Contract execution (ongoing)
Research, Evaluate, Study,
Compile statistics, Identify best
management practices, Prioritize,
Outreach

Months 9 & 10 (Dec & Jan)
Issue Draft Comprehensive
Report and Receive Public
Comment

Months 10 - 11 (Jan - Feb)
Publish FINAL REPORT

Timeline



Statewide Water Management Plan

E&E 9/23/2010 Update – On Schedule:

Task 1 (55%) – Review of Resources

Task 2 (58%) – Water Use Analysis

Task 3 (86%) – Well Registration / Notification Review

Task 4 (21%) – Aquifer Sustainability Recommendations

Task 5 (20%) – Rec. Cost/Benefit & Prioritization

Task 6 (70%) – Funding Opportunities

Task 7 (67%) – BMPs & Cost Analysis

Task 8 (79%) – Draft Report Public Hearing (Dec '10/Jan '11)

Task 9 (29%) – Exec. Summary & Final Report (Feb 2011)



Draft Plan Development Commission Member Workshops

Provided GWRC / GWMATF membership and interested parties additional opportunity for input and involvement in the development of the draft plan.

1. Written Questionnaire
2. Alexandria, La.
3. SSA Consultants, LLC

16 Responses
Sept. 22nd & 29th
Mtg. Facilitator



Dr. Christel Slaughter
SSA Consultants, LLC

**Statewide Water Management Plan
Workshop Recap**





STATEWIDE WATER MANAGEMENT PLAN WORKSHOP RECAP

Items in **bold red** represent topics receiving the most discussion during the two Statewide Water Management Plan workshops held during September 2010 in Alexandria, La.

- **Water Well Registration**
 - **Legislation for Denial of Ground Water Use**
 - **Notify Local Government Prior to Issuing Response to New Well Notifications**
 - **Require Drillers to Provide Prior Notification**
 - Verification of Well Use
 - Provide User Friendly, Non-Technical Form Completion Guidance
 - Establish “One Stop” Shop for All Applicable Local, State and Federal Regulations

• Evaluation

- **Utilize Academic / Federal Agency Resources for Larger Scale Ground Water / Aquifer Modeling**
- **Increase Water Metering, Water Level Measurements, Agency Inspections, Reporting and Database Entry**
- **Increase Emphasis on Sustainability of Aquifer Recharge Areas**
- Provide Single Number for Water Well Identification
- Implement Collection of Data to Support Aquifer Modeling
- Increase Use of Existing USGS Ground Water Well Monitoring Database

• **Evaluation (continued)**

- Explore Methods to Estimate Ground Water Use
- Increase Ground Water Quality Testing
- Use Independent Labs for Water Testing and Publish Data
- Evaluation of Aquifer Sustainability Over a Longer Period of Time
- Define Aquifer Sustainability and Sustainable Yield Criteria and Establish Resources to Manage the Same

• **Education**

- **Develop Water Conservation / Recycling Curriculum**
- **Implement Sustainable Yield Based Conservation Education for Stakeholders**
- **Coordinate With and Promote Local Efforts**
- **Implement Established Effective / Efficient Methods to Reach the Public**
- **Encourage Public Water Suppliers (Both Private and Municipal) to Educate Customers**
- **Expand Efforts with LSU AgCenter, LDAF and Others**

• **Education (continued)**

- Notify State Agencies of Water Management Priorities
- Alternatives to Public Water Supply Lawn and Gardening Watering (Cisterns)
- Educate Water Users of Rules and Regulations
- Provide More Frequent Stakeholder Outreach Events
- Disseminate Water Conservation Success Stories
- Provide Semi-Annual Newsletter
- Utilize Drillers to Distribute Educational Materials to Well Owners

• **Emergencies**

- **Current Emergency Regulations are Adequate**
- **Improve State and Local Agency Emergency Response, Coordination and Involvement**
- **Establish a Priority Ranking and Allowable Usage System During Emergencies**
- Create Parish Water Management Boards
- Establish Agency Representative Standing Committee to Recommend Water Quality / Quantity Emergency Actions

• **Enforcement**

- **Mandate Surface Water Use Cooperative Endeavor Agreements**
- **Assess Violators with Civil Penalties to Fund Water Projects**
- **Fully Fund State Programs**
- **Current Regulations are Adequate**
- Empower Parish Staff and Sheriff's Office to Issue and Enforce Citations
- Water Well Inspections by DNR Employees

- **Enforcement (continued)**

- Integrate Ground Water Resource Quality/Quantity Management within One Agency
- Assure Water Well Registration and Notification Compliance

• Incentives

- **Trust Fund for Surface / Ground Water Use Fees to Subsidize Surface Water Use**
- **Cost-share Funding to Assist in Developing Surface and Wastewater Reuse Alternatives**
- **Credit System for Alternative Users**
- **Provide Incentives / Tax Reductions to Encourage Surface Water Alternatives**
- **Incentives to Retain Forests and Agriculture to Benefit Watersheds**
- **Provide Positive Publicity to Water Users Choosing Surface Water Alternatives**

- **Incentives (continued)**

- Ground Water Consumption Fees
- Amend E&P Waste Onsite Storage Requirements to Provide Greater Opportunity to Recycle
- Streamline and Systemize State, Local and Federal Government Regulatory Authority

• **Collaboration**

- **Focus Collaboration on Incentives and Education**
- **Include Other States and Local Agencies in Aquifer Evaluation**
- **Establish Regional Bodies (Discussed 9/22/2010)**
- Expand GWR Commission to Include Federal Agencies, Others Not Currently Represented
- Encourage Water District and USACE Involvement
- Seek and Retain Competent and Productive Staff

• **Collaboration (continued)**

- Report Consistent Information and Data to All
- Increase Task Force Membership and Role in Water Policy and Management Decisions
- Utilize Institutional Knowledge and Research.
- Hold More Frequent and Localized Meetings for Local Government Participation
- Seek Legislation to Provide for Effective State / Local Collaboration for Research, Funding, Planning, Oversight, Resources, etc.

• **Monitoring**

- **Require Water Metering, Water Level Measurements, Agency Inspections, Reporting and Database Entry**
- **Increase Surface Water Quantity Measurement**
- **Require Water Well Use Reporting**
- Large Scale Continuous Aquifer Monitoring Network
- Privatize Water Quality and Quantity Monitoring
- Water Well Sampling and Testing by Certified Labs

• **Monitoring (continued)**

- Provide Funding to Local and Regional Organizations
- Pool State, Local and Federal Resources
- Maintain Monitoring at State / Local Level
- Assess Current Monitoring Activity and Reduce Duplication
- Improve External Sonris Well Data Search Capabilities
- Improve External Sonris Water Use and Production Search Capabilities
- Improve La. Water Use Report Data Reliability

• Auditing

- **Greater Accountability for Self Reporting Requirements**
- Periodic Inspections of Parish Water Quality Offices by Other State Offices
- Automated Electronic Reporting
- Assess Staffing Needs for Adequate Auditing
- Perform Independent Evaluation of Water Resources Agency Practices and Data Quality

- **Other**

- **Reservoir Development**
- **Shift Non-potable Users (Agriculture, Industry, etc.) Toward Surface Water Resources**
- **Develop the Plan on Sound Scientific Objectives**
- Develop Surface Water Resources
- Require Field Identification (Tags) on Water Wells
- Ensure Surface / Ground Water Resources Connection and Recognition in State Law
- Maintain Diligence on Addressing Critical Area and Area of Ground Water Concern Issues

Ground Water Resources Program Update



Mr. Gary Snellgrove

DNR Office of Conservation

- Evolution of the Water Well Driller Program
- Katrina & Rita Water Well damage – LRA Funding Update
- Haynesville Shale Frac Water Supply Implementation Update
- Statewide Water Well Notification Audit & Enforcement Update
- Public Outreach and Education



Evolution of the Water Well Driller Program

Recent Major Milestones:

Draft Proposed Regulations

Sept. 20, 2010 State Register Publication

Database Merge

Completed & Undergoing Data Update

POTPOURRI

Department of Natural Resources Office of Conservation

Advanced Notice of Rulemaking and Solicitation of Comments on Water Well Registration, Construction and Closure (LAC 56:1)

The Department of Natural Resources, Office of Conservation is requesting comments on the following enumerated issues regarding Water Well Registration, Construction and Closure, LAC 56, Part 1.

As part of the ongoing government streamlining effort, Act 437 of the Regular Session of the Louisiana Legislature, 2009 transferred the responsibilities relating to water wells and water well drillers from the Department of Transportation and Development to The Department of Natural Resources. As part of this transfer, the databases maintained by both departments have been merged and modernized. The Department of Natural Resources now seeks to update the forms and regulations pertaining to water wells and desires input from industry and the public pertaining to these issues.

Written comments concerning the proposed revisions are due no later than 4:30 p.m., October 20, 2010, and should be submitted to Gary Snelgrove, Office of Conservation, Environmental Division, P.O. Box 94275--Capitol Station, Baton Rouge, LA 70804-9275 or by Fax to (225) 342-3094. Persons commenting should reference this document as ENV 10-06.

1. Make all necessary administrative revisions in the regulations to reflect the shift in statutory authority from DOD to DNR, Office of Conservation.
2. LAC 56:1105.G.2. Registration of Reworked Wells. Add specific language citing enforcement authority of the agency for failure to comply with the water well registration requirements of unregistered wells that have been reworked, deepened or changed in any manner or if the screen setting is altered.
3. Include proof of liability insurance coverage for a minimum of \$1,000,000 as a condition for agency approval of all initial and annual renewal applications for water well driller contractor licenses.
4. Require all rig supply water wells to be constructed with a protective cement slab and four corner posts. Include rig supply well onsite location criteria to prevent or minimize risks of damage or environmental contamination. Require that all rig supply wells be properly plugged and abandoned within six months of completion of associated oil and gas well drilling activity if the rig supply well is constructed to meet rig supply well construction standards only, unless the rig supply well owner provides all necessary change of information or transfer of ownership, and agency notification for future well use for domestic or irrigation purposes only.
5. Require all water well pump installation activity to be reported to the agency by the company that performs the pump installation activity including written certification of compliance with sanitary code requirements for well disinfection.
6. LAC 56:1329. Revise existing requirements for annular space cementing to include use of sodium bentonite with minimum porosity requirements as is allowed by other southern states.
7. Require owner installation of control devices on all free flowing water wells regardless of the volume of water produced per day.
8. Incorporate the standard and procedures included in the December 2000 Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook into LAC 56, Part 1 regulations.
9. Clarify the definition of "Test Hole" under LAC 56:1113 to state: "a temporary exploratory borehole drilled for the sole purpose to obtain geologic, hydrologic and water quality data."
10. All forms included in LAC 56, Part 1 will be revised as needed to conform with all applicable revisions to the requirements.
11. Require water well drillers to complete all water well location information on all forms that currently require that information to be input by state agency inspectors or staff.
12. LAC 56:1315.A. Include "ponds" and "lakes" to the existing minimum distance requirement for "Drainage canal, ditch or stream"
13. LAC 56:1317.A. Provide clarification to the location requirements at levees such that these requirements clearly include not only water wells, but also geotechnical boreholes, monitoring wells, etc.
14. LAC 56:1317. Include a specific section for relief wells located within 250 feet from the land side toe of a levee that include: a) written approval from DHH, Office of Public Health, U.S. Corps of Engineers and the local levee authority, if applicable and b) minimum construction standards for grouting down to at least 10 feet from the ground surface and a one-way check valve.
15. LAC 56:1319.A. Revise the construction elevation requirements for wells located in flood-prone areas to exclude wells located in areas along the Gulf Coast prone to storm surges and include specific well construction requirements to prevent or minimize well damage and groundwater contamination from storm surge and debris impact.
16. LAC 56:1323.D. Add clarification to the regulatory language regarding health and safety measures to include reporting within 24 hours any observations during the drilling and construction of wells that indicate the subsurface presence of natural gas or other gaseous substance.
17. LAC 56:1327.C. Clarify screen material requirements by revising the 3rd sentence with the underlined as follows: "If a corrosive environment is present, the screen should be made entirely of the same material, and the lap or extension pipe (for not less than 5 feet) above the screen and blank pipe, if used, should be made of the same material as the screen."
18. LAC 56:1331.F.1. Revise water well registration forms to require water well drillers to certify compliance with well disinfection requirements.

James H. Welsh
Commissioner

1009#03

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2134



Hurricanes Katrina & Rita Water Well Damage Assessment

LRA moves to Office of
Community Development-
Disaster Recovery Unit

1. Pre-Application Approved
2. **OCD Appl. - DNR Approval
≤ Friday, Oct. 8, 2010**
3. Notice to Proceed
Pending OCD Review/Approval



BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION

SCOTT A. ANGELLE
SECRETARY
JAMES H. WELSH
COMMISSIONER OF CONSERVATION

March 25, 2010

Mr. Patrick Forbes
Disaster Recovery Infrastructure Manager
Louisiana Recovery Authority
P.O. Box 94095
Baton Rouge, LA 70804

Re: Water Well Damage Assessment Report
Request for Corrective Action Funding

Dear Mr. Forbes:

Enclosed for your review is a copy of the final summary report provided to our office by GEC, Inc. concluding their contract obligations to assess water well damage caused by Hurricanes Katrina and Rita. The report identified damaged water wells and prioritized wells by their potential to cause environmental harm from downward migration of surface water contaminants into the groundwater aquifer. Briefly, the report identified 20 wells as high risk and 154 wells as moderate risk that our agency is currently focus on mitigating.

The estimated cost range for a licensed water well driller to plug and abandon a 2" to 4" PVC domestic water well approximately 200 feet deep in a location that is reasonably accessible is approximately \$7 to \$10 per foot plus 10% for mobilization and demobilization. A 4" PVC domestic well at 200 feet deep in a land accessible location is estimated to cost approximately \$2,200. The total estimated cost to plug and abandon all 174 wells identified as high and moderate risk at \$2,200 each is \$382,800.

Conservation respectfully requests Louisiana Recovery Authority's assistance with providing our agency funding up to the \$383,000 which is the estimated amount needed to mitigate the potential environmental risk to groundwater resources posed

Environmental Division

Post Office Box 94275 • Baton Rouge, Louisiana 70804-9275 • 617 North 3rd Street • 9th Floor • Baton Rouge, Louisiana 70802
Phone (225) 342-8244 • Fax (225) 242-3505 • www.dnr.state.la.us/conservation



Haynesville Shale Frac Water

Mandatory Drilling & Frac Water Supply Source and Volume Reporting



BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION
MEMORANDUM

SCOTT A. ANGELLE
SECRETARY
JAMES H. WELSH
COMMISSIONER OF CONSERVATION

September 15, 2009

TO: All Concerned
FROM: James H. Welsh
Commissioner of Conservation
SUBJECT: Reporting Requirements for Water Use in E&P Operations

To promote effective groundwater resource management and to aid in the development of policies and regulations to protect these resources, it is the policy of this Office to require the reporting of information related to water use in drilling, completion, stimulation and workover operations.

Specifically, the water source and associated volume must be reported on page two (2) of the 'Well History and Work Resume Report' (Form WH-1) which must be filed within twenty days after completion or recompletion operations. The water sources must be identified by either the water well number or water body name, as appropriate. Separate water volumes for rig supply use and stimulation operation use must be provided. A completed example of page two (2) of the 'Well History and Work Resume Report' (Form WH-1) is attached.

At this time, the policy shall only apply to wells for which a work permit is issued to conduct hydraulic fracturing stimulation operations.

A revised 'Well History and Work Resume Report' (Form WH-1) is available from the department web site at the following address: <http://dnr.louisiana.gov/cons/CONSEREN/documents/WH-1.doc>

The policy is effective immediately. Questions on implementation may be directed to Mr. Robert "Bob" Romero at (225) 342-8242 or robert.romero@la.gov.

OFFICE OF CONSERVATION
OF THE STATE OF LOUISIANA

JAMES H. WELSH
COMMISSIONER OF CONSERVATION

JHW:CS
Attachment

Post Office Box 94275 • Baton Rouge, Louisiana 70804-9275 • 617 North 3rd Street • 9th Floor • Baton Rouge, Louisiana 70802
Phone (225) 342-5540 • Fax (225) 342-2584 • www.dnr.state.la.us/conservation
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FORM WH-1 Supplemental Page 3 - FILE ONLY FOR WELLS THAT HAVE BEEN HYDRAULICALLY FRACTURE STIMULATED				
SERIAL NO.	WELL NAME & NO.	WORK PERMIT NO.	OPERATOR CODE	
For hydraulically fractured wells, list below all water sources and corresponding water volumes used in drilling, completion, stimulation and workover operations. (Direct questions to the Groundwater Resources Section at (225) 342-8242). NOTICE - No water obtained from a domestic well may be used in E&P operations without prior Office of Conservation authorization.				
DRILLING RIG SUPPLY				
GROUND WATER SOURCE WELL # (DOTD or DNR #)	OTHER WATER SOURCE (Name of surface water body, public supply, etc.)	LOCATION # (surface water source only) LATITUDE LONGITUDE		DRILLING RIG SUPPLY VOLUME (gal)
HYDRAULIC FRACTURE STIMULATION				
GROUND WATER SOURCE WELL # (DOTD or DNR #)	OTHER WATER SOURCE (Name of surface water body, public supply, etc.)	LOCATION # (surface water source only) LATITUDE LONGITUDE		STIMULATION VOLUME (gal) (hydraulic fracturing)
TOTAL GROUND WATER VOLUME USED IN ALL OPERATIONS (gal)		NO. OF FRAC STAGES		
CERTIFICATE: I certify that, to the best of my knowledge, all water used in operations conducted on this well are from the above listed sources and these sources are being used for the above listed purposes in accordance with all applicable laws and regulations. I further understand that water produced from domestic water wells shall not be used for these purposes without prior authorization by the Office of Conservation.				
Signature: _____		Title: _____		Date: _____



Haynesville Shale Frac Water

Mandatory Drilling & Frac Water Supply Source and Volume Reporting

Actions of the Commissioner:

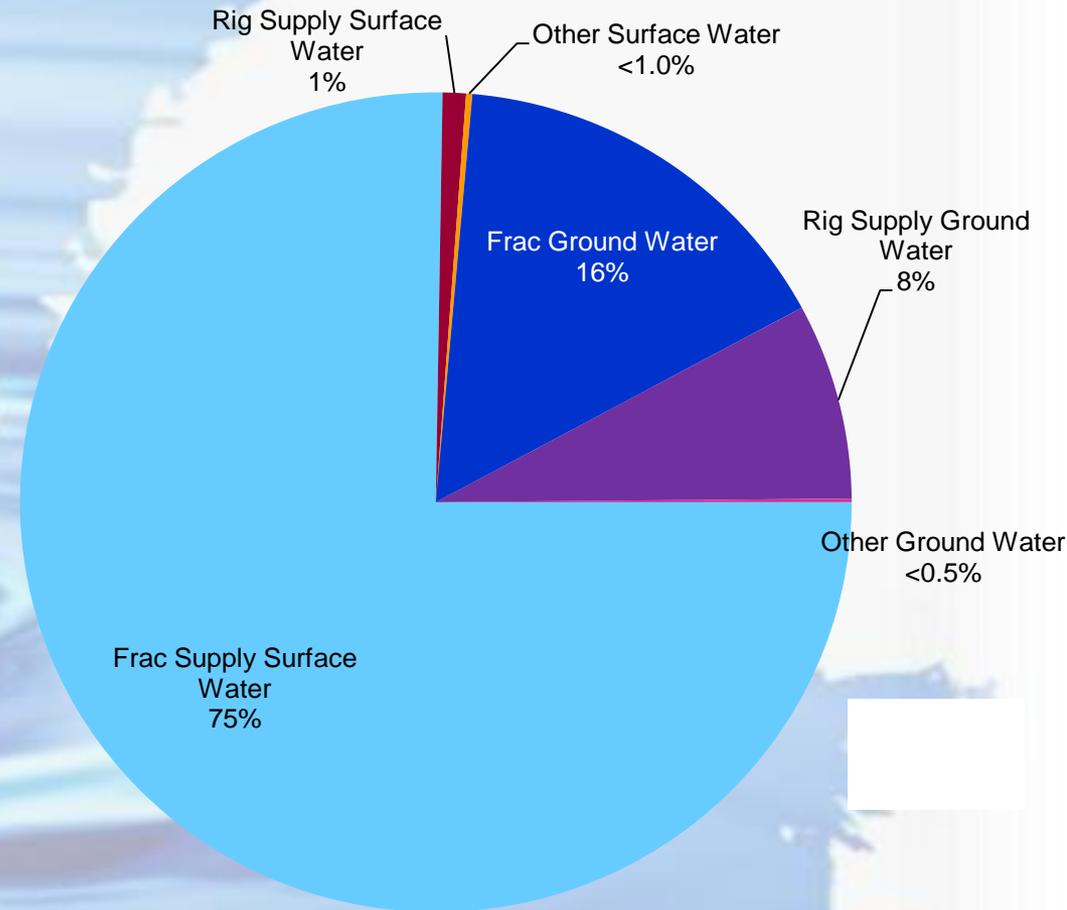
1. Requires operators to report water sources and volumes
2. Issued on September 15, 2009
3. Enforceable effective October 1, 2009
4. Revised form on March 1, 2010
5. Provides valuable groundwater resource management tool
6. Statistics



Haynesville Shale Natural Gas Well Development Drilling and Stimulation Operations

Reported Water Usage from 10/1/2009 to 9/30/2010 WH-1 Information

Source	Volume (Gallons)
Frac Groundwater	453,238,109
Frac Surface Water	2,169,801,485
Drilling Rig Groundwater	222,944,777
Drilling Rig Surface Water	26,127,423
Other Groundwater	4,033,153
Other Surface Water	10,001,189



As of 9/30/2010
608 Reporting wells
1174 Total work permits



Statewide Well Notification Audit and Enforcement

Initiated a comprehensive statewide audit schedule

- Two year plan to audit all ground water wells drilled in Louisiana after July 1, 2001
- To date, **49** parishes audited
- Current status of implementation

2009 Schedule

January	February	March	April	May	June	July	August	September	October	November	December	
Caddo, Red River, Bossier, DeSoto					Calcasieu, Cameron	Jeff Davis, Vermillion	Acadia, Lafayette	Allen, Evangeline, St. Landry	Bienville, Webster	Claiborne, Jackson, Lincoln	Ouachita, Morehouse, Union	
CARIZZO – WILCOX (Haynesville)					CHICOT				SPARTA			



Statewide Well Notification Audit and Enforcement

Comprehensive statewide audit schedule continued...

2010 Schedule

January	February	March	April	May	June	July	August	September	October	November	December
EBR, E. Feliciana, WBR, W. Feliciana	Livingston, St. Helena, Tangipahoa, Washington	St. Tammany	E. Carroll, Madison, Richland, W. Carroll	Catahoula, Concordia, Franklin, Tensas	Caldwell, Grant, LaSalle, Natchitoches, Sabine, Winn	Beauregard, Vernon	Avoyelles, Pointe Coupee, Rapides	Assumption, Iberia, Iberville, St. Martin, St. Mary	Ascension, St. Charles, St. James, St. John	Jefferson, Lafourche, Terrebonne	Orleans, Plaquemines St. Bernard
SOUTHEAST LOUISIANA			MS RIVER ALLUVIAL		OTHER						

Annual Statewide Schedule - Beginning 2011 and proceeding annually

January	February	March	April	May	June	July	August	September	October	November	December
Bienville, Bossier, Caddo, Desoto, Red River, Webster	Claiborne, Jackson, Lincoln, Morehouse, Ouachita, Union	Acadia, Calcasieu, Cameron, Jeff Davis, Vermillion	Allen, Beauregard, Evangeline, Lafayette, St. Landry	EBR, E. Feliciana, Livingston, St. Helena, WBR, W. Feliciana	E. Carroll, Franklin, Madison, Richland, Tensas, W. Carroll	Caldwell, Grant, LaSalle, Natchitoches, Sabine, Winn	Avoyelles, Catahoula, Concordia, Rapides, Vernon	Assumption, Iberia, Iberville, Pointe Coupee, St. Martin	Ascension, St. Charles, St. James, St. John, Tangipahoa, Washington	Orleans, St. Tammany	Jefferson, Lafourche, Plaquemines, St. Bernard, St. Mary, Terrebonne



Statewide Well Notification Audit and Enforcement Results

Parish	Actions	Parish	Actions
Caddo	71	Webster	43
Red River	28	Claiborne	33
Bossier	65	Jackson	23
DeSoto	53	Lincoln	47
Calcasieu	83	Ouachita	39
Cameron	24	Morehouse	97
Jefferson Davis	88	Union	27
Vermilion	161	East Baton Rouge	33
Acadia	114	East Feliciana	24
Lafayette	91	West Baton Rouge	5
Allen	31	West Feliciana	8
Evangeline	40	Livingston	36
St. Landry	95	St. Helena	24
Bienville	60	Tangipahoa	126
		Washington	65
		St. Tammany	471



Statewide Well Notification Audit and Enforcement Results

Parish	Actions	Parish	Actions
East Carroll	65	Beauregard	33
Madison	48	Vernon	22
Richland	69	Avoyelles	60
West Carroll	64	Pointe Coupee	16
Catahoula	12	Rapides	98
Concordia	11		
Franklin	57		
Tensas	17		
Caldwell	20		
Grant	7		
LaSalle	0		
Natchitoches	22		
Sabine	29		
Winn	17		



Public Outreach and Education

Ground Water Conservation

- 1) **Middle School Curriculum Guide**
- 2) **Water Company Monthly Billing**
- 3) **LSU AgCenter / NRCS Partnership**
- 4) **Public Service Announcement**



Next Meeting Date

Wednesday, December 1, 2010

11:00 AM

TBA

